

CLAIMS

I claim:

1 1. A welding power source capable of
2 receiving a range of input voltages, comprising:
3 4 5 an input rectifier configured to receive an ac
input and providing a first dc signal;
6 7 8 9 a dc voltage stage configured to receive the
first dc signal and providing a second dc signal;
10 11 12 13 an inverter configured to receive the second dc
signal and providing a second ac signal and
configured to receive at least one control input;
14 15 16 17 an output transformer configured to receive the
second ac signal and providing a third ac signal
having a current suitable for welding;
18 19 an output circuit configured to receive the
third ac signal and providing a welding signal;
a controller configured to provide at least one
control signal to the inverter; and
an auxiliary power controller configured to
receive a range of input voltages and providing a
control power signal to the controller.

1 2. The apparatus of claim 1, wherein the
auxiliary power controller is capable of providing the
control power signal at a preselected control signal
voltage, regardless of the magnitude of the ac input
signal.

1 2 3. The apparatus of claim 2, further
including an auxiliary transformer with a plurality of
primary taps, wherein the auxiliary power controller is
in electrical communication with the plurality of primary
taps.

1 2 4. The apparatus of claim 1, wherein the dc
voltage stage includes a boost circuit.

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1 5. The apparatus of claim 1, wherein the
2 inverter includes a pulse width modulator.

1 6. The apparatus of claim 1, wherein the
2 range of input voltages is 230 volts to 575 volts.

1 7. The apparatus of claim 1 wherein the
2 output circuit includes a rectifier.

1 8. The apparatus of claim 1 wherein the
2 output circuit includes a cycloconverter.

1 9. A method of providing a welding current
2 from a range of input voltages, comprising:
3 rectifying an ac input and providing a first dc
4 signal;
5 converting the dc signal to a second ac signal;
6 transforming the second ac signal into a third
7 ac signal having a current suitable for welding; and
8 receiving the ac input and providing an
9 auxiliary power signal source at a preselected
10 control power signal voltage, regardless of the
11 magnitude of the ac input signal.

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1 10. The method of claim 9, wherein the step of
2 converting the dc signal includes the steps of converting
3 the dc signal to a second dc signal and inverting the
4 second dc signal to provide the second ac signal.

1 11. ¹⁴ The method of claim 9 further including
2 the step of providing control signals to an inverter.

1 12. The method of claim 9, wherein the step of
2 providing the auxiliary power signal includes the step of
3 transforming the ac input signal.

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1 13. The method of claim 10, wherein the step
2 of converting the first dc signal to a second dc signal
3 includes boosting the voltage of the first dc signal.

1 14! The method of claim 10, wherein the step
2 of inverting includes the step of pulse width modulating.

1 17. A welding power source for providing a
2 welding current from a range of input voltages,
3 comprising:

rectifier means for receiving an ac input and providing a first dc signal:

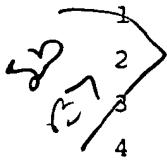
converting means for converting the dc signal to a second ac signal:

transforming means for transforming the second ac signal into a third ac signal having a current suitable for welding;

output means for providing a welding current; and

~~auxiliary power means for receiving the ac input and providing an auxiliary power signal at a preselected control power signal voltage, regardless of the magnitude of the ac input signal.~~

1 18. The apparatus of claim 17, wherein the
2 means for converting includes means for converting the dc
3 signal to a second dc signal and means for inverting the
4 second dc signal to provide the second ac signal.



20. The apparatus of claim 17, wherein the means for providing the auxiliary power signal includes means for transforming the ac input signal into the auxiliary power signal.

1 21. The apparatus of claim 17, wherein the
2 means for converting the dc signal to a second dc signal
3 includes means for boosting the voltage.

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1 23. The apparatus of claim 27, wherein the
2 output means includes means for rectifying the third ac
3 signal.

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1 24. The apparatus of claim ~~1~~, wherein the
2 output means includes means for cycloconverting the third
3 ac signal.